

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Previously Presented): A method for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal comprises a plurality of subcarriers, the method comprising:

detecting frequency channel characteristics of each subcarrier of the OFDM signal for each of said plurality of antenna elements,

dividing a power of the subcarriers by the sum of a squared magnitude of the frequency channel characteristics of the plurality of antennas,

adjusting at least one of an amplitude and phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier frequency channel or all subcarrier frequency channels, and

transmitting the OFDM signal by using the adjusted subcarriers via said plurality of antenna elements.

Claim 3 (Previously Presented): A method for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal comprises a plurality of subcarriers, the method comprising:

detecting frequency channel characteristics of each subcarrier of the OFDM signal for each of said plurality of antenna elements,

dividing the transmitted signal by a magnitude of a channel response vector,

adjusting at least one of an amplitude and phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier frequency channel or all subcarrier frequency channels, and

transmitting the OFDM signal by using the adjusted subcarriers via said plurality of antenna elements.

Claim 4 (Previously Presented) A method for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal comprises a plurality of subcarriers, the method comprising:

detecting frequency channel characteristics of each subcarrier of the OFDM signal for each of said plurality of antenna elements,

dividing the transmitted signal by a channel response vector,

adjusting at least one of an amplitude and phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier frequency channel or all subcarrier frequency channels, and

transmitting the OFDM signal by using the adjusted subcarriers via said plurality of antenna elements.

Claims 5-8 (Cancelled).

Claim 9 (Currently Amended): A method for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal comprises a plurality of subcarriers, the method comprising:

detecting frequency channel characteristics of each subcarrier of the OFDM signal for each of said plurality of antenna elements,

adjusting at least one of an amplitude and phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier frequency channel or all subcarrier frequency channels,

limiting an adjustment of a magnitude of each subcarrier signal to an upper threshold,

fixing the transmission power of the corresponding subcarrier at the upper threshold and adapting a modulation scheme for OFDM signal when the upper threshold is reached for the subcarrier signal[.]; and

transmitting the OFDM signal by using the adjusted subcarriers via said plurality of antenna elements, ~~and~~

Claim 10 (Previously Presented): The method of claim 9, further comprising:
signaling the adaptation of the modulation scheme of a subcarrier signal to a receiving side.

Claim 11 (Previously Presented): The method of claim 9, further comprising:
adapting the modulation scheme of a subcarrier signal by simplifying the modulation scheme.

Claim 12 (Previously Presented): The method of claim 9, further comprising:
adapting the modulation scheme of a subcarrier signal by not modulating the subcarrier signal.

Claim 13 (Previously Presented): The method of claim 9, wherein:

when the modulation scheme of a subcarrier signal is adapted to reduce the bit rate of the subcarrier signal, the modulation scheme of at least one other subcarrier signal is changed to a more complex modulation scheme.

Claims 14-16 (Cancelled).

Claim 17 (Previously Presented): A transmission device adapted for transmitting an orthogonal frequency division multiplex (OFDM) signal by using a plurality of antenna elements in a wireless transmission system, wherein the OFDM signal utilizes a plurality of subcarriers, the device comprising:

means for detecting the frequency subcarrier channel characteristics of each of the plurality of subcarriers for each of said plurality of antenna elements,

a division means for dividing the subcarrier signals respectively by a sum of the squared magnitude of the frequency channel characteristics of all sub-carrier signal,

means for adjusting amplitude and/or phase of each subcarrier in accordance with the detected characteristics of the corresponding subcarrier channel, and

means for transmitting the OFDM signal by using the adjusted subcarrier signals via the plurality of antenna elements.

Claims 18-28 (Cancelled).